ARTZ & ARTZ P.C.
Law Offices

Intellectual Property and Technology Related Causes

FACSIMILE TRANSMITTAL SHEET

Fax: (248) 223-9522
Phone: (248) 223-9500

TO: Mail Stop Appeal Brief – Patents
FIRM: USPTO
FAX NO.: (571) 273-8300

==========

From: Kevin G. Mierzwa

Date: February 8, 2006

Our File No.: 202-0433 (FGT 1683 PA)

Your Ref. No. 10/608,909

Comments:

Attached is Appeal Brief.

Total Pages (incl. Cover sheet): 8

If there are any problems during transmission, please call: (248) 223-9500.

Donna Kraft
(Operator)

28333 TELEGRAPH ROAD, SUITE 250, SOUTHFIELD, MICHIGAN 48034
TELEPHONE: (248) 223-9500 -- FACSIMILE: (248) 223-9522

RECEIVED
CENTRAL FAX CENTER

FEB 0 8 2006

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In Re Application of

Jianbo Lu

Serial No.: 10/608,909

Group Art Unit: 2632

Filed: 06/27/2003

Examiner: Nguyen, Tai T.

For: WHEEL LIFTED AND GROUNDED IDENTIFICATION FOR AN AUTOMOTIVE VEHICLE

Docket No: 202-0433 (FGT-1683 PA)

CERTIFICATE OF MAILING/TRANSMISSION (37 C.F.R. § 1.8(a))

I hereby certify that this correspondence is, on the date shown below, being transmitted by facsimile to (571) 273-8300 (Centralized Facsimile Number).

Signature

Date: 2/8/06

Kevin G. Mierzwa

APPEAL BRIEF

Mail Stop Appeal Brief – Patents
Commissioner for Patents
Box 1450
Alexandria, VA 22313-1450

Sir:

The following Appeal Brief is submitted in response to the Notice of Appeal dated December 8, 2005.

I. Real Party in Interest

The real party in interest in this matter is Ford Global Technologies, LLC, which is a wholly owned subsidiary of Ford Motor Company both in Dearborn, Michigan (hereinafter "Ford").

II. Related Appeals and Interferences

There are no other known appeals or interferences which will directly affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

III. Status of the Claims

Claims 1-7 stand rejected in the Final Office Action. A copy of the claims on appeal is attached as a Claims Appendix.

IV. Status of Amendments

There have been no amendments filed subsequent to the final rejection.

V. Summary of Claimed Subject Matter

Claim 1 is best illustrated with respect to Figure 2C. Claim 1 includes three roll condition detectors (64A-C) that generate a first, second, and third roll condition, respectively. This is described in paragraph 48. A controller 56 is coupled to those detectors and determines wheel lift in response to the first roll condition, second roll condition, and third roll condition. As described in the specification, various ways to determine a roll condition are set forth. Roll condition determines whether or not the wheels are lifted or potentially lifted. Each of the roll conditions is independent and use several different sensors for the determination.

One example of a roll condition of the vehicle is set forth in paragraph 54 by estimating the force or torque associated with the loading condition of one or more suspension or chassis components. Another example of the roll condition is set forth in paragraph 55 by the rotational positions of various sensors. Another example of a roll condition is set forth in paragraphs 60, 61, 62, 63, and 64. Specific examples of the roll conditions in paragraphs 60-64 are given in various places throughout the specification, including beginning in paragraph 65, which refers to the relative roll angle and the wheel departure angle using lateral acceleration and roll angular rate sensor, using a rolling radius-based wheel departure roll angle as set forth beginning in paragraph 83, using a longitudinal wheel slip ratio as set forth beginning in paragraph 89, using a slip rate wheel lift set forth beginning in paragraph 94, determining wheel lift using normal loading as set forth in paragraph 100, and determining wheel lift using road torque as set forth beginning in paragraph 109.

Claim 2 recites that the first and second roll conditions are determined passively. Passive wheel lift is determined by the state of the sensors rather than actively applying brakes and determining if a roll condition is determined in an active manner. The examples provided above provide many passive methods for determining wheel lift.

Claim 3 recites that the controller generates a passive wheel lift status signal. This corresponds to the determination in a passive manner similar to that set forth in Claim 3.

Claim 4 recites that the passive wheel lift status comprises a plurality of levels. The plurality of levels is set forth in paragraph 116. Examples of levels are absolutely grounded, possibly grounded, absolutely lifted, and possible lifted. Also, a no indication for unclear results may also be indicated.

Claim 5 recites that the controller generates a potential rollover signal in response to the wheel lift signal. This is set forth in various locations including paragraph 186 of the present application.

Claim 6 is dependent upon Claim 5 and recites that the safety device is controlled in response to the potential rollover signal. This is set forth in paragraph 39. A safety device 44 is set forth in Figure 2A. Examples of safety devices are set forth in paragraph 51.

Claim 7 specifically recites that the safety device comprises at least one of an active brake control system, active rear steering systems, an active front steering system, an active anti-rollbar system, and an active suspension system. In addition to the above, examples of the steering are set forth in paragraph 56. Other examples are set forth in paragraph 39 as mentioned above, including active or semi-active suspension systems, anti-rollbars, airbags, or other safety devices deployed or activated upon sensing predetermined dynamic conditions of the vehicle.

VI. Grounds of Rejection to be Reviewed on Appeal

The following issues are presented in this appeal:

Whether Claims 1-3 and 5-7 are anticipated under 35 U.S.C. §102(b) by *Matsumoto* (4,976,330).

Whether Claim 4 is obvious under 35 U.S.C. §103(a) over *Matsumoto*.

VII. Argument

The Rejection of Claims 1-3 and 5-7 under 35 U.S.C. §102(b)

Claim 1

Appellants believe that only one roll condition is set forth in the *Matsumoto* reference in Col. 4, lines 24-37. This passage clearly determines liftoff in one manner. The liftoff is determined using the lateral vehicle acceleration exceeding a reference value and the wheel stroke of at least either of the inside wheels of the vehicle taking a turn that also exceeds a predetermined limit. This is set forth in lines 34-37. Thus, both of these conditions must be met for wheel liftoff to be determined. Earlier in this paragraph *Matsumoto* states that the lateral vehicle acceleration uses the vehicle velocity and the steering angle. These are not roll conditions as is set forth in the present claims. These are one-way or one roll condition as defined in the present specification. Roll conditions may be determined in many ways but include, but are not limited to, the roll radius-based wheel departure roll angle, longitudinal wheel slip ratio, slip rate wheel lift, normal loading wheel lift, road torque wheel lift, and the like. In each of these various conditions sensors are used to make the roll condition determination. The reason several conditions are set forth is many of these are passive and thus only provide an indication for potential rollover or wheel lift. Thus, by using three different detection methods, the vehicle dynamics may be categorized and a more accurate wheel lift determination may be set forth. Appellants respectfully submit that only one way to determine wheel lift is set forth in *Matsumoto* using both the lateral acceleration and the wheel stroke. It is clear each one of these alone is not adequate to determine wheel lift. Wheel stroke alone can only be determined to a maximum extent of the suspension. Once the suspension maximizes its stroke, no determination can be determined if the wheel is lifted or not. However, if the lateral acceleration is used as in *Matsumoto*, a heavy lateral acceleration combined with a full extension of the stroke of the wheel will provide an indication. Lateral acceleration alone may also not provide an adequate indication alone of wheel lift. This is why *Matsumoto* uses wheel stroke and lateral acceleration to determine his one roll condition. Therefore, Appellants respectfully submit that *Matsumoto* only teaches one roll condition and therefore does not meet the three roll condition limitations set forth in the claim. The roll conditions themselves are not sensors alone but various ways to determine wheel lift. Therefore, Appellants respectfully request the Board to reverse the Examiner's position with respect to Claim 1.

Claim 2

Claim 2 depends from Claim 1 and recites that each of the roll conditions are determined passively. As mentioned above, three roll conditions are not found in the *Matsumoto* reference and therefore three passively determined roll conditions are not set forth. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to Claim 2.

Claim 3

Claim 3 recites that the controller generates a passive wheel lift status signal. Appellants respectfully submit that no passive wheel lift status signal is set forth in the *Matsumoto* reference and therefore Appellants respectfully request the Board to reverse the Examiner's position with respect to Claim 3.

Claim 5

Claim 5 recites that the controller generates a potential rollover signal in response to the wheel lift signal. Although a liftoff of the wheels is detected, no potential rollover signal is set forth in the *Matsumoto* reference. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to Claim 5 as well.

Claim 6

Claim 6 depends upon Claim 5 and recites a safety device that is controlled in response to the potential rollover signal of Claim 5. As mentioned above, no teaching or suggestion is provided for a potential rollover signal and therefore no controlling of a safety device is set forth in the *Matsumoto* reference that is controlled in response to the potential rollover signal. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to Claim 6 as well.

Claim 7

Claim 7 recites specific examples of a safety device that is controlled in response to the potential rollover signal. Because no potential rollover signal is generated in response to the wheel lift signal as set forth in Claims 6 and 5, the types of devices set forth in Claim 7 that are controlled thereby are also inherently not set forth. Appellants therefore respectfully request the Board to reverse the Examiner's position with respect to this claim as well.

The Rejection of Claim 4 under 35 U.S.C. §103(a)

Claim 4

Claim 4 depends from Claim 3. Claim 4 recites that the passive wheel lift status signal comprises a plurality of levels. Appellants can find no teaching or suggestion for providing a plurality of levels. The Examiner points to Col. 3, lines 40-54, and Col. 4, lines 43-56. In these cases, the lateral acceleration signal and the wheel stroke signal are compared to predetermined limits or thresholds. These are not various levels or degrees of liftoff. Further, Appellants respectfully submit that providing various levels of liftoff is also not taught or suggested. Appellants respectfully request the Board to reverse the Examiner's position with respect to Claim 4.

VIII. Claims Appendix

A copy of each of the claims involved in this appeal, namely Claims 1-7 is attached hereto as a Claims Appendix.

IX. Evidence Appendix

None.

X. Related Proceedings Appendix

None.

XI. Conclusion

For the foregoing reasons, Appellant respectfully requests that the Board direct the Examiner in charge of this examination to withdraw the rejections.

Please charge any fees required in the filing of this appeal to deposit account 06-1510 or, if there are insufficient funds, to use deposit account 06-1505.

Respectfully submitted,

Kevin G. Mierzwa
Registration No. 38,049
Attorney for Appellant

Date: 2/8/06

Artz & Artz, P.C.
28333 Telegraph Road, Suite 250
Southfield, Michigan 48034
(248) 223-9500

CLAIMS APPENDIX

1. A system for an automotive vehicle having a wheel comprising:

a first roll condition detector generating a first roll condition signal;

a second roll condition detector generating a second roll condition signal;

a third roll condition detector generating a third roll condition signal; and

a controller coupled to the first roll condition detector, the second roll condition detector and the third roll condition detector, said controller determining wheel lift in response to the first roll condition, the second roll condition and the third roll condition.

2. A system as recited in claim 1 wherein first roll condition, said second roll condition and said third roll condition are determined passively.

3. A system as recited in claim 1 wherein said controller generates a passive wheel lift status signal.

4. A system as recited in claim 3 wherein said passive wheel lift status signal comprises a plurality of levels.

5. A system as recited in claim 1 wherein said controller generates a potential rollover signal in response to the wheel lift signal.

6. A system as recited in claim 5 further comprising a safety device, said controller controlling said safety device in response to said potential rollover signal.

7. A system as recited in claim 6 wherein said safety device comprises at least one of an active brake control system, an active rear steering system, an active front steering system, an active anti-roll bar system, and an active suspension system.